



Midwest ISO presentation to the Louisiana Public Service Commission

February 25, 2011

Agenda

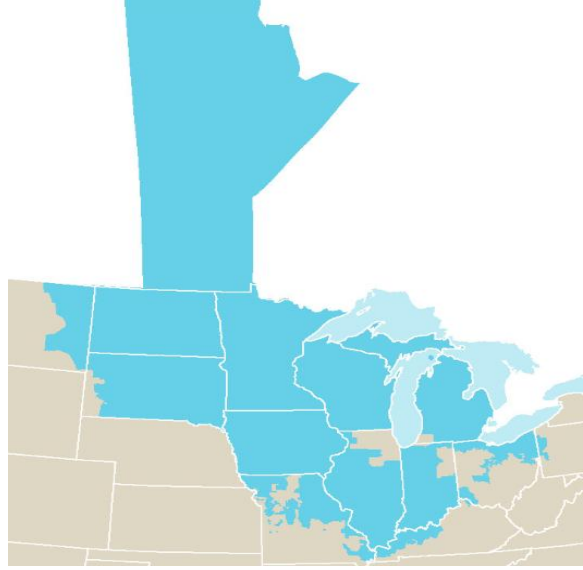
- ▶ Overview
- ▶ Governance
 - ▶ Corporate
 - ▶ Stakeholder
- ▶ Value Proposition / Business Case
- ▶ Transmission Expansion
- ▶ Appendices
 - ▶ Value Proposition
 - ▶ Transmission Expansion
 - ▶ Physical Tie / Interconnections
 - ▶ Qualified Facilities
 - ▶ Compliance / Audits

The Midwest ISO can provide significant value to both Entergy's customers and other stakeholders within the footprint

- ▶ We have a proven, refined, mature market operation
 - Value Proposition is quantifiably demonstrated
 - Governance model is independent, but collaborative
 - Independent Power Producers / Qualified Facilities issues are familiar and addressable
- ▶ Sufficient transfer capacity exists to deliver significant benefits to Entergy
- ▶ Transmission planning will bring additional benefits

The Midwest ISO has a large footprint, comprised primarily of traditionally regulated states

Midwest ISO's Reliability Footprint



Midwest ISO's Market Footprint



Interconnected High Voltage Transmission Lines

- ▶ 56,300 miles

Installed Generation Capacity

- ▶ 144,132 MW (market footprint)
 - 1,304 generating units
- ▶ 160,757 MW (reliability footprint)
 - 1,522 generating units

Wind Generation

- ▶ 9,200 MW – installed capacity
- ▶ 7,020 MW – peak generation

Peak Demand – 7/13/2006

- ▶ 116,030 MW (market footprint)
- ▶ 136,520 MW (reliability footprint)

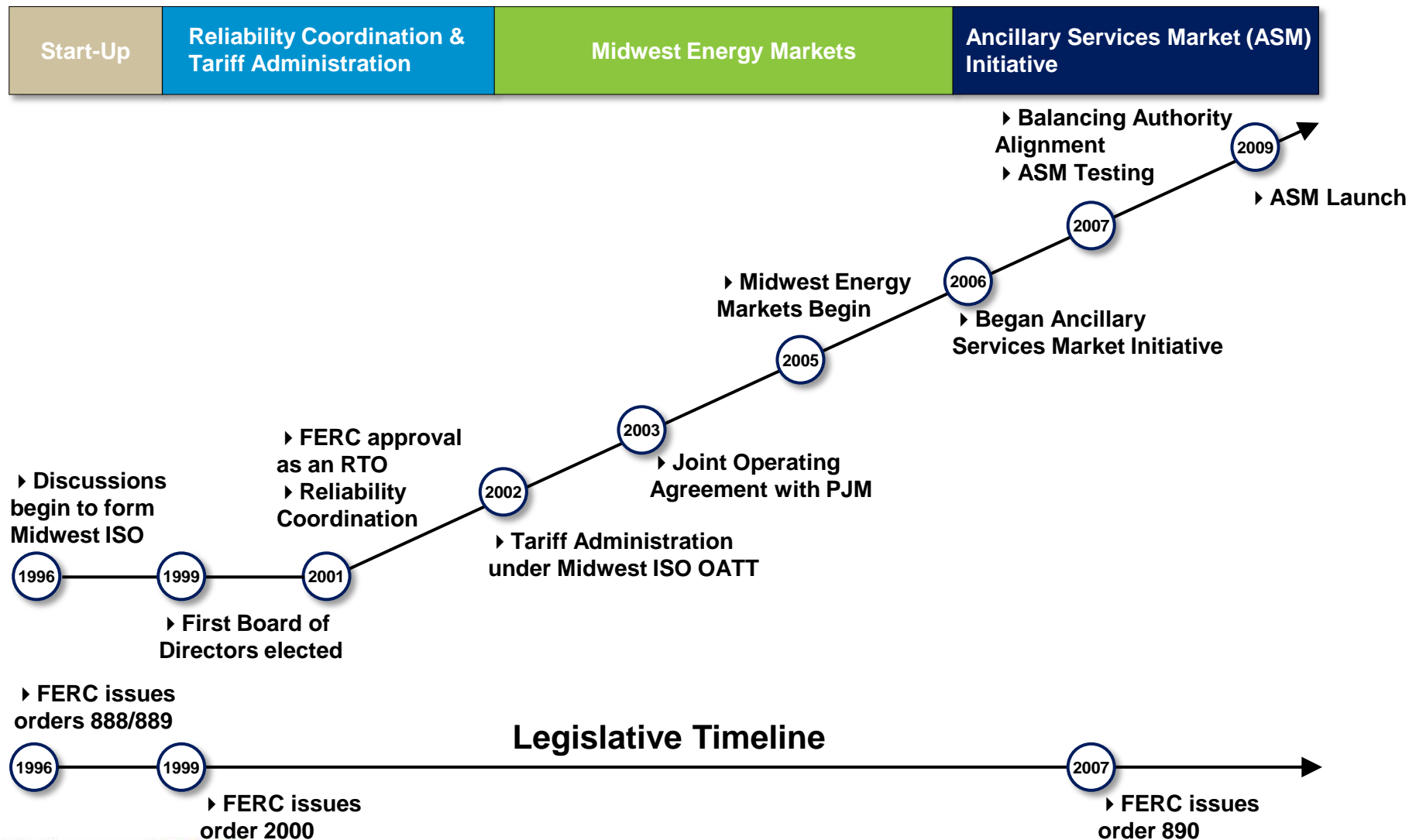
Midwest Market Highlights

- ▶ \$24 billion annual gross market charges (2009)
- ▶ 360+ Market Participants who serve 40+ million people

Three Control Centers

- ▶ Carmel, IN (Headquarters)
- ▶ St. Paul, MN
- ▶ Indianapolis, IN (Backup)

The Midwest ISO's development began as a means to comply with FERC Orders 888/889, but growth was driven by value creation



The Midwest ISO's role is concentrated in a few key areas

What We Do	Implications
Provide independent transmission system access	<ul style="list-style-type: none">>Equal and non-discriminatory access>Compliance with FERC requirements>Eliminate transmission rate pancaking
Deliver improved reliability coordination through efficient market operations	<ul style="list-style-type: none">>Improved regional coordination>Enhanced system reliability>Independent lowest cost unit commitment, dispatch, and congestion management
Coordinate regional planning	<ul style="list-style-type: none">>Integrated system planning>Broader incorporation of renewables>Balance transmission and generation tradeoffs
Foster platform for wholesale energy markets	<ul style="list-style-type: none">>Encourage prudent infrastructure investments>Facilitation of regulatory initiatives>Market price/value discovery

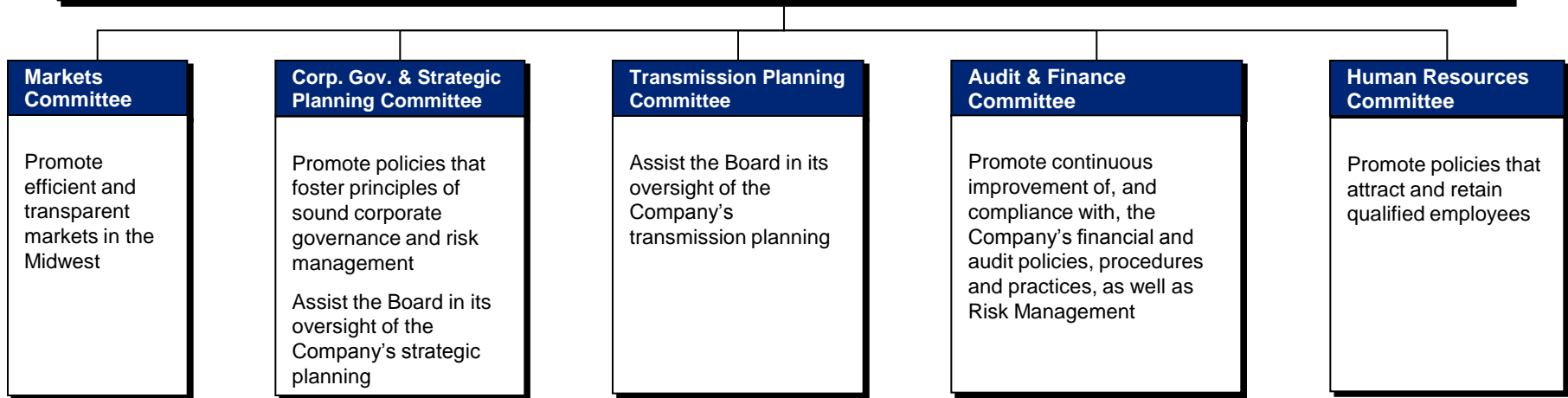
Agenda

- ▶ Overview
- ▶ **Governance**
 - ▶ **Corporate**
 - ▶ **Stakeholder**
- ▶ Value Proposition / Business Case
- ▶ Transmission Expansion
- ▶ Appendices
 - ▶ Value Proposition
 - ▶ Transmission Expansion
 - ▶ Physical Tie / Interconnections
 - ▶ Qualified Facilities
 - ▶ Compliance / Audits

Midwest ISO Corporate Governance Structure

Midwest ISO Board of Directors (Seven Independent Members and the CEO)

- | | | | |
|-------------------------------|---------------------|-----------------------|----------------------|
| ▶ J. Michael Evans, Chair | ▶ John Bear, CEO | ▶ Baljit Dail | ▶ Judy Walsh |
| ▶ Paul J. Feldman, Vice Chair | ▶ Michael J. Curran | ▶ Shelley A. Longmuir | ▶ Eugene W. Zeltmann |



- ▶ The Transmission Owners Agreement established an independent Board of seven persons with staggered 3 year terms and the CEO:
 - Four members with expertise in
 - Corporate leadership at the senior management or board of directors level, or
 - Professional disciplines of finance, accounting, engineering, or utility laws and regulation
 - One member with expertise in the operation of electric transmission systems
 - One member with expertise in the planning of electric transmission systems, and
 - One member with expertise in commercial markets, trading and associated risk management
- ▶ The current Board of Directors has extensive experience in the energy industry
- ▶ All Board and Committee meetings are open to stakeholders and the public

The Organization of MISO States (OMS) is extensively involved in the stakeholder process

Overview

- ▶ Mission: “The purpose of the OMS is to coordinate regulatory oversight among the states; making recommendations to the Midwest ISO, the Midwest ISO BOD, the FERC, other relevant governmental entities, and state commissions as appropriate; and intervening in proceedings before FERC and in related judicial proceedings to express the positions of the OMS.”
- ▶ Membership: Open to any governmental authorities that regulate T&D rates or has primary transmission siting authority
- ▶ Midwest ISO Advisory Committee: OMS appoints three members
- ▶ Governance:
 - Quorum = majority present
 - Election of officers = plurality
 - Change of OMS by-laws = 2/3 vote
 - All other matter = majority vote
 - OMS cannot bind any individual state in any way
- ▶ Authority: :
 - OMS does not have the power to force filings under the Federal Power Act, Section 205
 - OMS cannot bind any individual state
- ▶ Funding: Provided by Midwest ISO

Past Successes

- ▶ Midwest ISO Value Proposition
- ▶ Transmission Planning
 - Regional Generation Outlet Study
 - Joint Coordinated System Plan
 - Eastern Wind Integration & Transmission Study
 - Midwest Governor’s Association
- ▶ Transmission Cost Allocation
- ▶ Established Guiding Principles
 - Resource Adequacy
 - Demand Response

2010 Strategic Planning

- ▶ OMS Guiding Principles
 - Leadership
 - Education
 - Collaboration
- ▶ Goals
 - Planning and Infrastructure Development
 - Improvement of MISO Processes
 - Improvement of OMS Processes
 - Build Lasting Partnerships

These groups are the senior committees



While there are many key difference between Midwest ISO and SPP governance structures, the key one for Entergy is that SPP essentially comes down to one member, one vote. The Midwest ISO listens to and weighs all stakeholders' positions and then makes an independent decision. Accountability is driven by the voluntary nature of the organization.

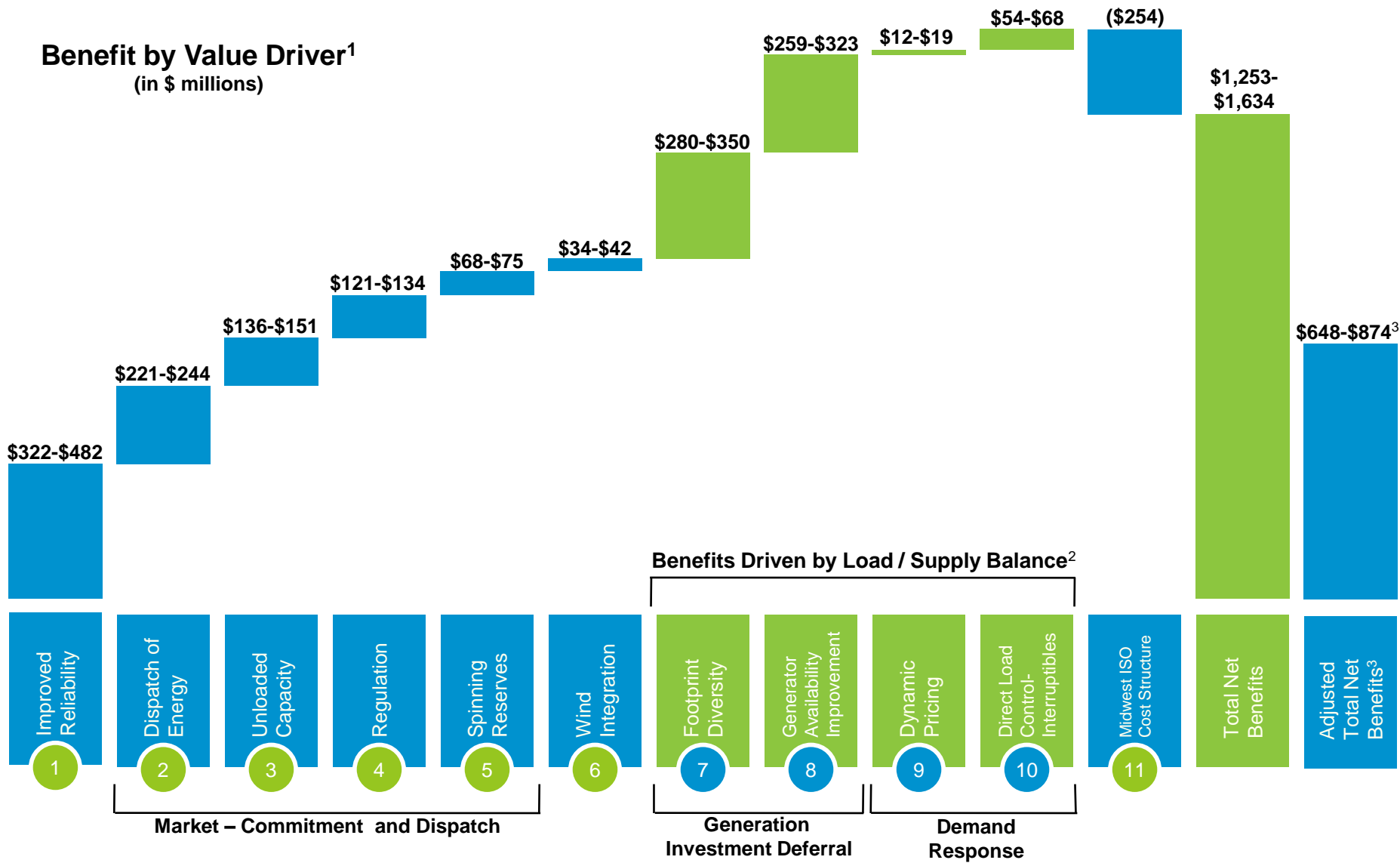
	Midwest ISO	SPP
BOD Governing Standard	<ul style="list-style-type: none"> • Delaware Corporate Law • BOD has the ultimate decision making responsibility 	<ul style="list-style-type: none"> • Consensus based approach • Nothing is voted on by the BOD before it has been approved by several layers of membership committees – Working Groups (all levels), Market Operations and Policy Committee and an in-room “straw vote” of members present • BOD votes via secret ballot after “straw vote” • No known instances of voting against recommendation
BOD Director Selection Process	<ul style="list-style-type: none"> • 2 candidates recommended by Nominating Committee via executive search firm • BOD puts forth at least 1 candidate per vacancy for Member vote • 50% approval needed for election 	<ul style="list-style-type: none"> • Corporate Governance Committee nominates at least 2 candidates per vacancy via executive search firm • Members vote on all candidates nominated • Super majority approval of Transmission Owners and Transmission Users required for election to BOD
BOD Standing Committees	<ul style="list-style-type: none"> • Comprised entirely of Midwest ISO BOD Members • Committees serve an advisory role with ultimate responsibility resting with BOD 	<ul style="list-style-type: none"> • Except for Oversight Committee, majority of Committee members are representatives of members • Markets Operations and Policy Committee, reporting directly to BOD, comprised of 1 rep. from each member
Organization of MISO States (“OMS”) vs. SPP’s Regional State Committee (“RSC”)	<ul style="list-style-type: none"> • OMS provides advisory role to BOD • Formally recognized as a stakeholder sector • Cannot force filings at FERC 	<ul style="list-style-type: none"> • RSC has authority to force FERC filing over defined set of issues related to transmission funding, rates /cost allocation and FTR allocation • SPP can file separate proposal that differs from RSC mandated filing – but has never exercised this right
Independent Market Monitor	<ul style="list-style-type: none"> • Oversight and selection responsibility of IMM rests with Markets Committee of BOD 	<ul style="list-style-type: none"> • In-house function overseen by SPP President • Oversight Committee responsible for NERC Compliance function

Agenda

- ▶ Overview
- ▶ Governance
 - ▶ Corporate
 - ▶ Stakeholder
- ▶ **Value Proposition / Business Case**
- ▶ Transmission
- ▶ Appendices
 - ▶ Value Proposition
 - ▶ Transmission Expansion
 - ▶ Physical Tie / Interconnections
 - ▶ Qualified Facilities
 - ▶ Compliance / Audits

The Midwest ISO 2010 Value Proposition

Benefit by Value Driver¹ (in \$ millions)

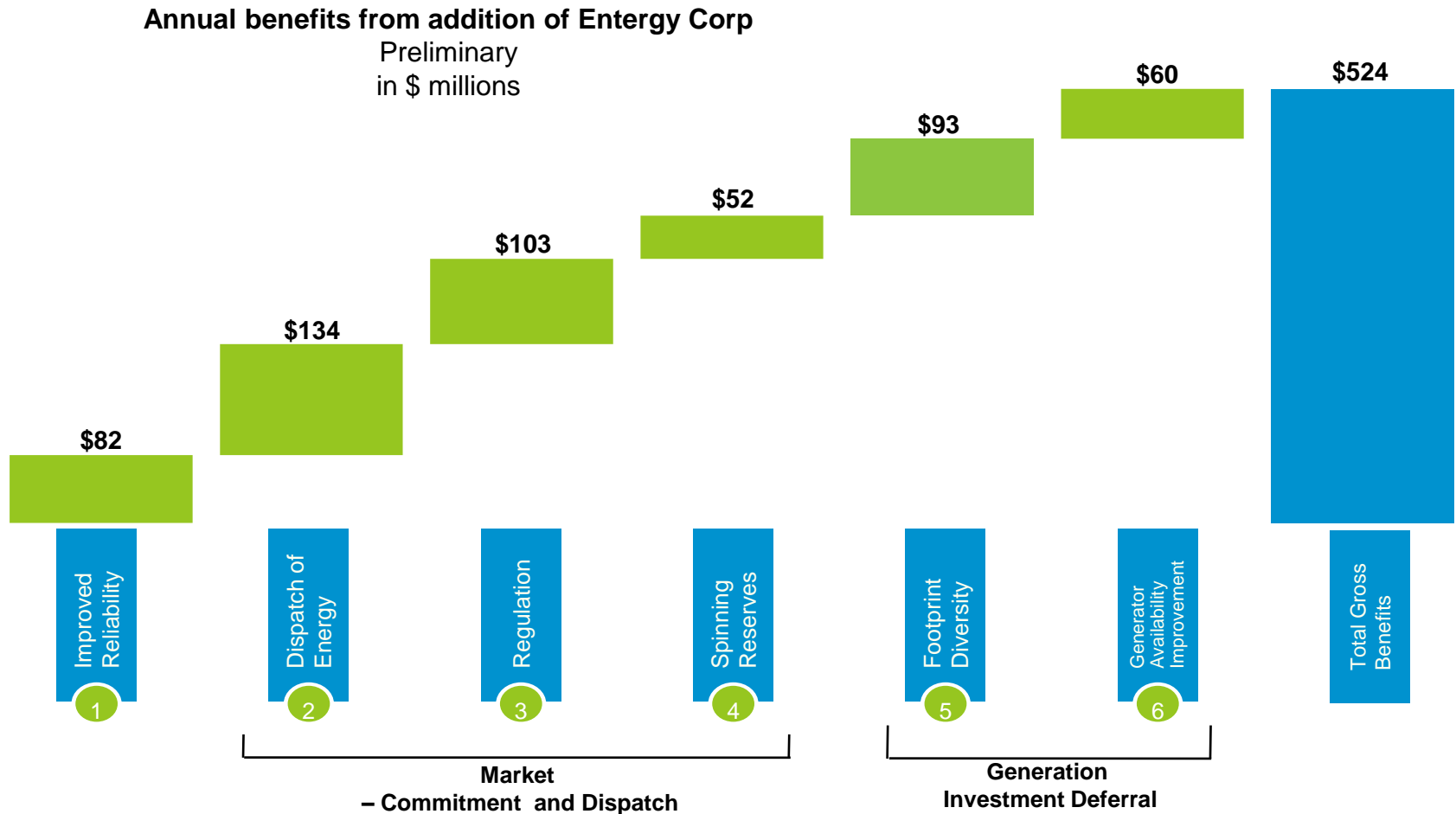


¹Figures shown reflect annual benefits and costs expected for 2010

²These benefits will be realized when the load / supply balance narrows

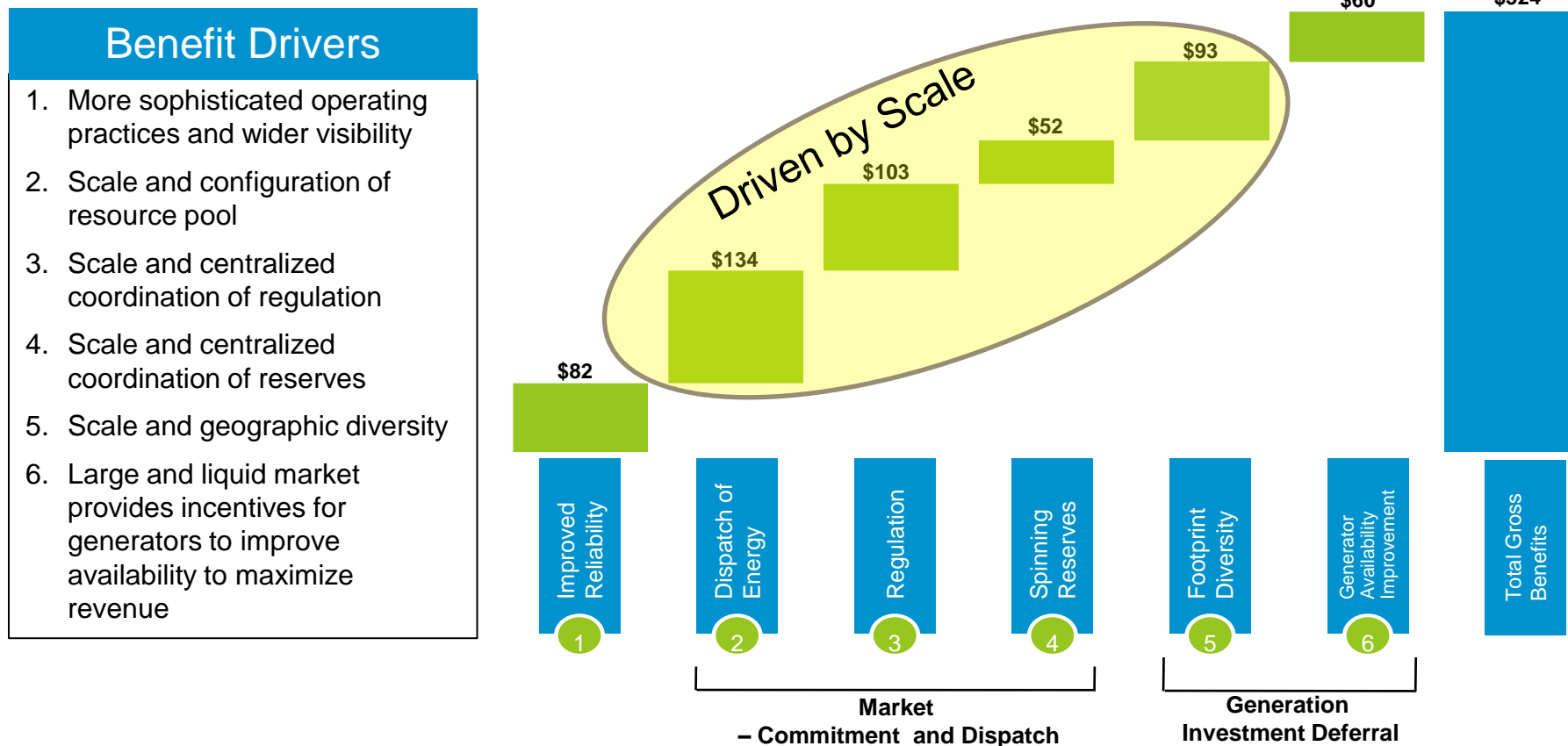
³Adjusted total net benefits exclude benefits driven by load / supply balance

Entergy's membership in the Midwest ISO would add value to both the Entergy's customers and the existing Midwest ISO regions



The majority of the benefits from Entergy's entry are attributable to increased scale of the market footprint

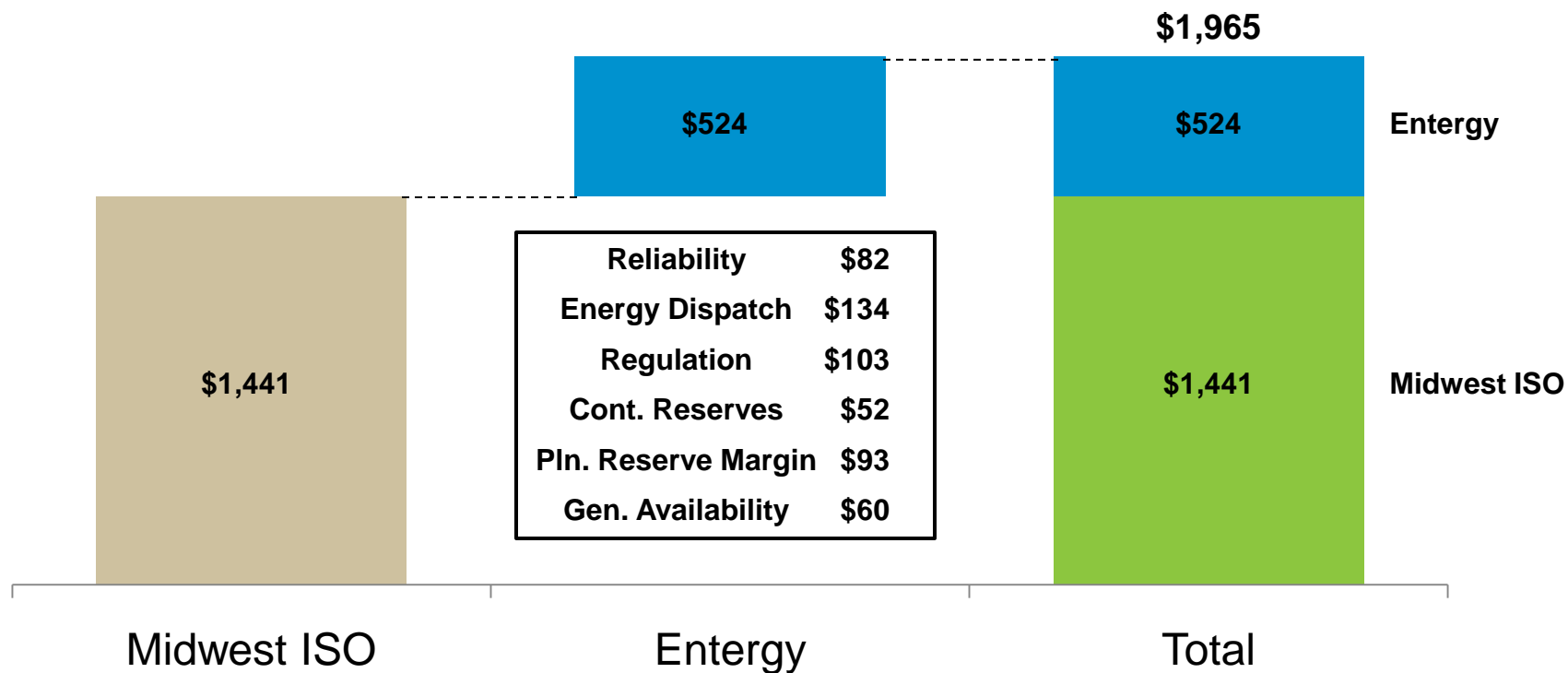
Annual value proposition benefits for Entergy Corp – Preliminary
In \$ millions



Summary of Midwest ISO 2010 Value Proposition

Annual Benefits - Preliminary

In \$ millions



The Midwest ISO membership has expanded significantly since initial operations. However, a small number of members have voluntarily exited.

Member Additions		Member Departures
Ameren IP	ITC Midwest LLC	Louisville Gas & Electric
Ameren UE/ Ameren CIPS	Michigan Electric Transmission Company, LLC	FirstEnergy (Dec. 2011)
American Transmission Systems, Inc.	Michigan Public Power Agency	Duke Energy Ohio (Dec. 2011)
Board of Water, Electric, & Communications - Muscatine	MidAmerican Energy Company	
Central Minnesota Municipal Power Agency	Municipal Electric Utility – Cedar Falls, Iowa	
City of Columbia, Missouri	Northern Indiana Public Service Company	
City of Springfield, Illinois	Southern Minnesota Municipal Power Agency	
Dairyland Power Cooperative	Big Rivers Electric Corporation	
Great River Energy		

Agenda

- ▶ Overview
- ▶ Governance
 - ▶ Corporate
 - ▶ Stakeholder
- ▶ Value Proposition / Business Case
- ▶ **Transmission Expansion**
- ▶ Appendices
 - ▶ Value Proposition
 - ▶ Transmission Expansion
 - ▶ Physical Tie / Interconnections
 - ▶ Qualified Facilities
 - ▶ Compliance / Audits

Midwest ISO Planning Objectives

Fundamental
Goal



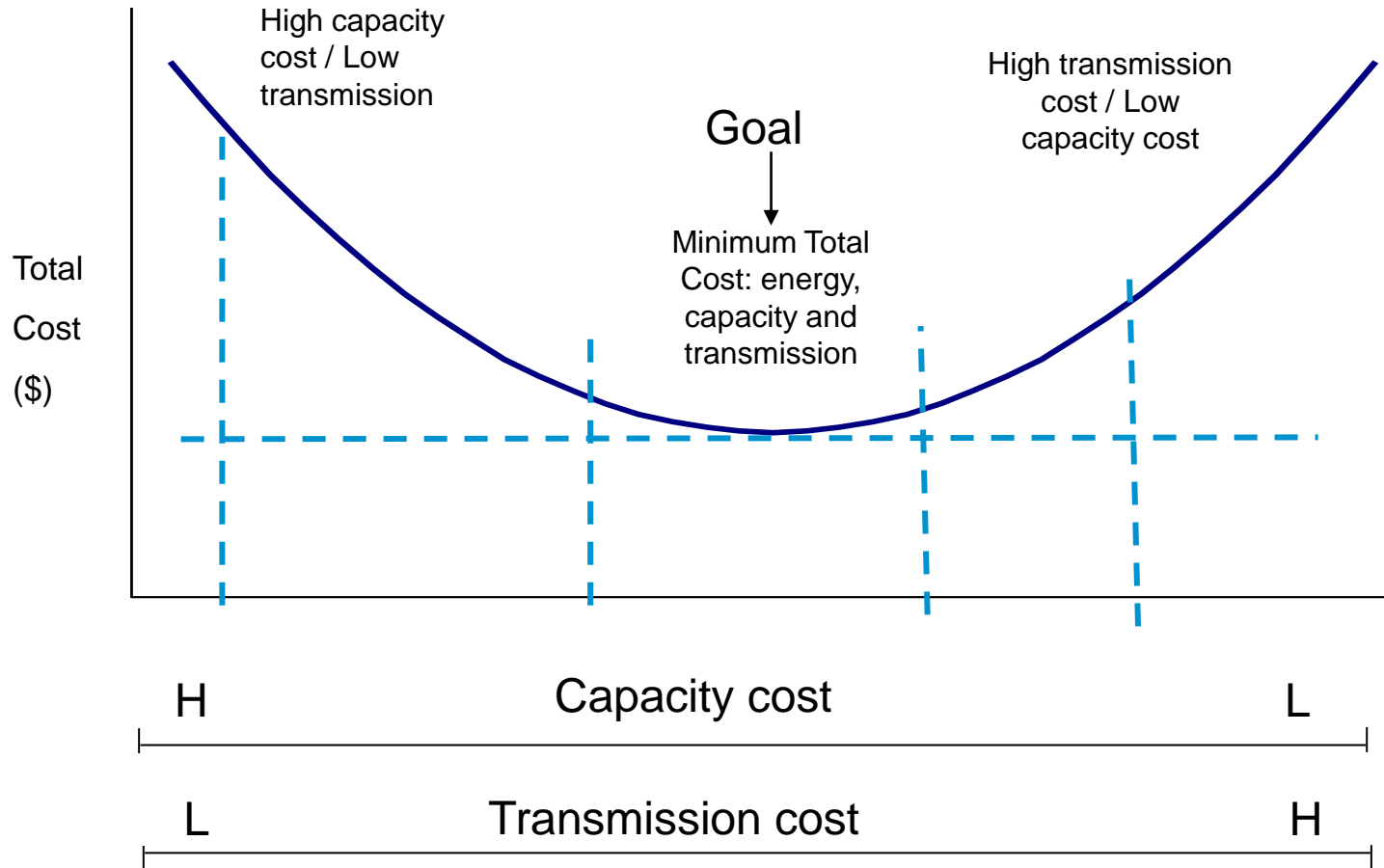
The development of a comprehensive expansion plan that meets reliability needs, policy needs, and economic needs

Midwest ISO
Board of
Director
Planning
Principles

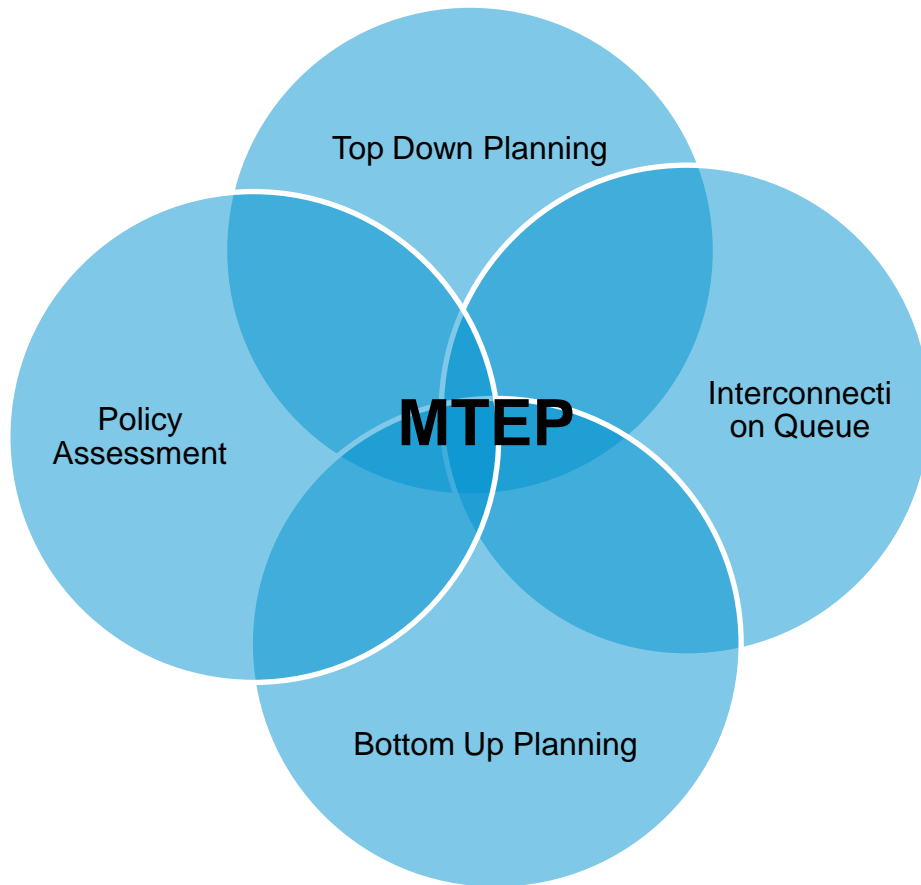


- Make the benefits of a competitive energy market available to customers by providing access to the lowest possible electric energy costs
- Provide a transmission infrastructure that safeguards local and regional reliability and supports interconnection-wide reliability
- Support state and federal renewable energy objectives by planning for access to all such resources (e.g. wind, biomass, demand side management)
- Provide an appropriate cost allocation mechanism
- Develop a transmission system scenario model and make it available to state and federal energy policy makers to provide context and inform the choices they face

The Midwest ISO's transmission planning process is focused on minimizing the total cost of delivered power to consumers: energy, capacity and transmission



Midwest ISO Transmission Expansion Plan (MTEP)

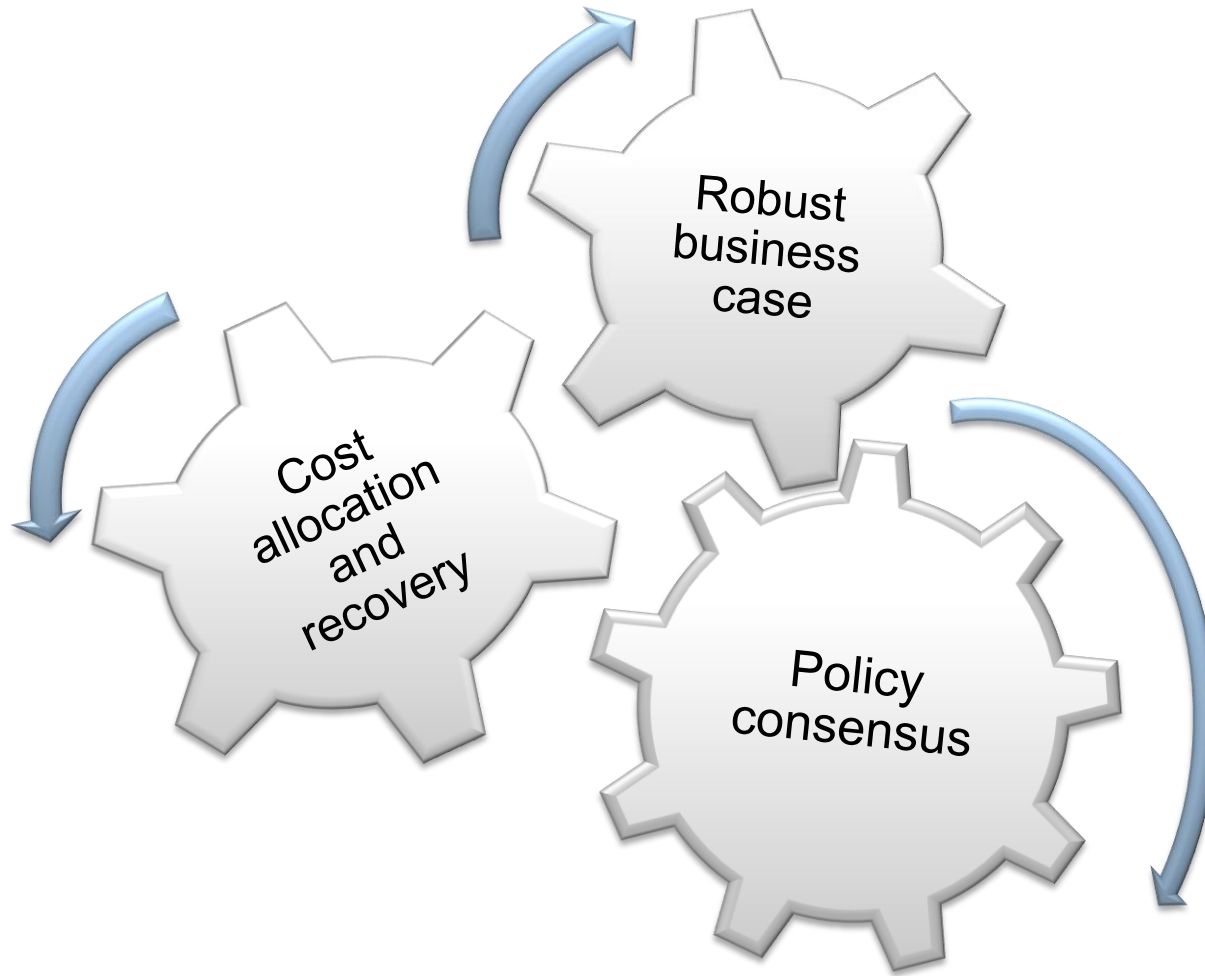


- The MTEP is the culmination of all planning efforts performed by the Midwest ISO during a given planning cycle
- This planning process is consistent with the Board of Directors Planning Principles
- Each of the four pillars of the Midwest ISO Planning Approach informs the other, resulting in a fully integrated view of project value inclusive of reliability, market efficiency, public policy, and other value drivers across all planning horizons

MTEP Activities

	Top Down Planning	Bottom Up Planning	Interconnection Queue	Policy Assessment
Description	<ul style="list-style-type: none"> •Develop solutions for outstanding needs, •Test effectiveness of input plans and seek efficiencies 	Ensure plans identified by the member Transmission Owners are sufficient to address reliability standards and form an efficient set of expansions to meet identified needs	Evaluate specific interconnection requests and Place resulting upgrades in base expansion model	Analyze the impacts of changes in state or federal policy on the Midwest ISO system
Examples	Regional Generator Outlet Study, Candidate MVP Portfolio, MTEP economic analysis, Long Term Assessment	MTEP reliability analysis	Interconnection Studies, System Planning and Analysis, Detailed Planning Phase	EPA Regulations study, Eastern Wind Integration Transmission Study
Tools	Production Cost models (PROMOD), Generation Expansion (EGEAS), Loss of Load (MARS)	Loadflow models (PSS/E)	Loadflow models (PSS/E)	All

Conditions Precedent to Increased Transmission Build



Cost Allocation Overview

Allocation Category	Driver(s)	Allocation Overview
Baseline Reliability Project	NERC Reliability Criteria	Primarily shared locally through Line Outage Distribution Factor Methodology; 345 kV and above 20% postage stamp to load
Generator Interconnection Project	Interconnection Request	Paid for by requestor; 345 kV and above 10% postage stamp to load
Market Efficiency Project ¹	Reduce market congestion when benefits are 1.2 to 3 times in excess of cost	Distribute to planning regions commensurate with expected benefit; 345 kV and above 20% postage stamp to load
Multi Value Project	Address energy policy laws and/or provide widespread benefits across footprint	100% postage stamp to load

1. Market Efficiency Project cost allocation methodology currently under review at the RECBTF

Multi Value Project Myths

Myth	Fact
MVP's are Socialism	MVP's act to open up markets to competition
MVP's are only about wind	The transmission system is non-discriminatory, all resource types have equal access to the market.
MVP's are a FERC cram down	MVP's are a response to a need identified by stakeholders. The MVP Cost Allocation Methodology was developed with all Midwest ISO stakeholders through an 18 month open and transparent process. FERC's role is to determine if the methodology is just and reasonable.
Local only solutions are cheaper	Most economists agree that larger markets produce the most cost effective solutions. A combination of local and regional solutions has been shown to be best for consumers.
Every transmission line on a planning map is a reality	The planning maps represent a starting point for further analysis. States ultimately choose what will be built, where and when.

Agenda

- ▶ Overview
- ▶ Governance
 - ▶ Corporate
 - ▶ Stakeholder
- ▶ Value Proposition / Business Case
- ▶ Transmission
- ▶ **Appendices**
 - ▶ Value Proposition
 - ▶ Transmission Expansion
 - ▶ Physical Tie / Interconnections
 - ▶ Qualified Facilities
 - ▶ Compliance / Audits

Appendices

- A – Value Proposition - Details
- B – Transmission Expansion – Additional Information
- C – Physical Tie / Interconductivity
- D – Qualified Facilities
- E – Compliance / Audits

Appendix A

Value Proposition - Details

The Midwest ISO's has an industry leading suite of system visualization and monitoring tools which coupled with the market based congestion management procedures...

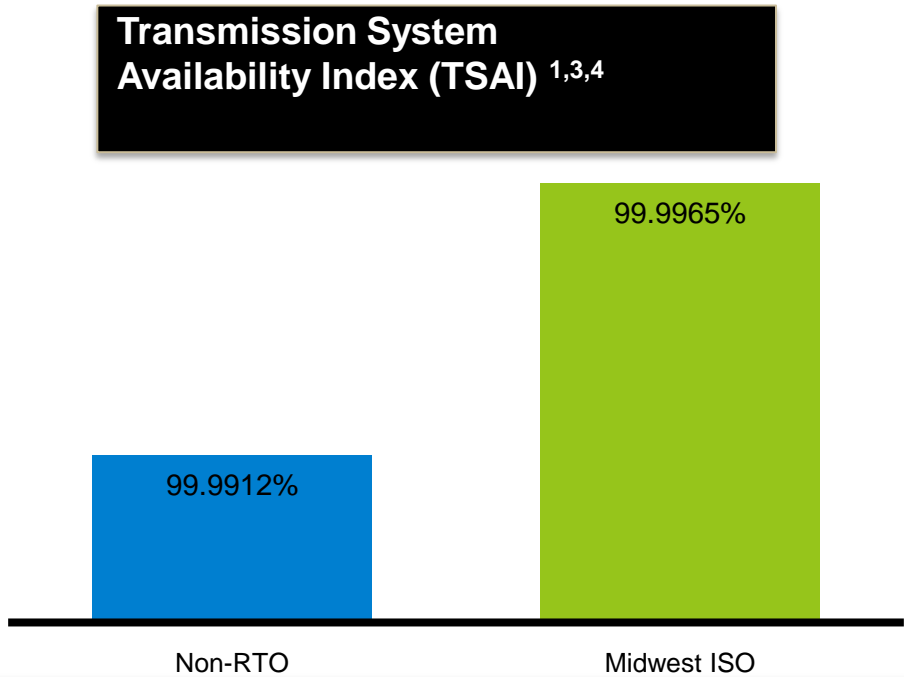
Midwest ISO System Tools

- ▶ **State Estimator – Power Systems Model**
 - 200,000+ data points collected every 15 seconds
 - Solves every 90 seconds
- ▶ **Contingency Analyzer**
 - 8,500 contingencies evaluated every 150 seconds
- ▶ **System Visualization Tools and Alarming**
 - Draws operator attention to important data
- ▶ **Extensive Operator Training**
 - Including a full dispatch training simulator
- ▶ **On-Line Backup Facility**
 - Fully redundant power system and market applications

Managing Transmission Congestion

- ▶ **Transmission Load Relief – Traditional Method**
 - Non-market method of managing congestion
 - 30 to 60 minutes to obtain relief
 - Pro-rate share reduction of transmission usage
 - Disregards economic impacts
- ▶ **Market Dispatch**
 - Market's Unit Dispatch System (UDS) performs a security-constrained unit dispatch every 5 minutes
 - Rapid congestion relief in the most economically efficient manner possible given the assets available

...which provides improved transmission system reliability, decreasing the outage costs to end-use customers



Annual Value of Improved Grid Reliability Benefits – Entergy benefits are incremental to Midwest ISO stand alone	
Midwest ISO Stand Alone	Entergy Preliminary
\$402 million	\$82 million

¹Disturbances with outages exceeding 1,000,000 customers and/or outage durations longer than one week were excluded from the analysis as it was assumed those characteristics fit the profile of a distribution-level event

²The Load Loss Recovery Factor is used to account for the progressive recovery of load during an outage.

³Data collected from: (a) NERC, 2000-2007 & 2009 Disturbance Data (transmission based outages only), (b) Energy Information Administration, 2000-2007 & 2009 Disturbance Data (transmission based outages only), and (c) Energy Information Administration, EIA-826 Database. NERC 2008 Disturbance Data was unavailable as of the time of publication.

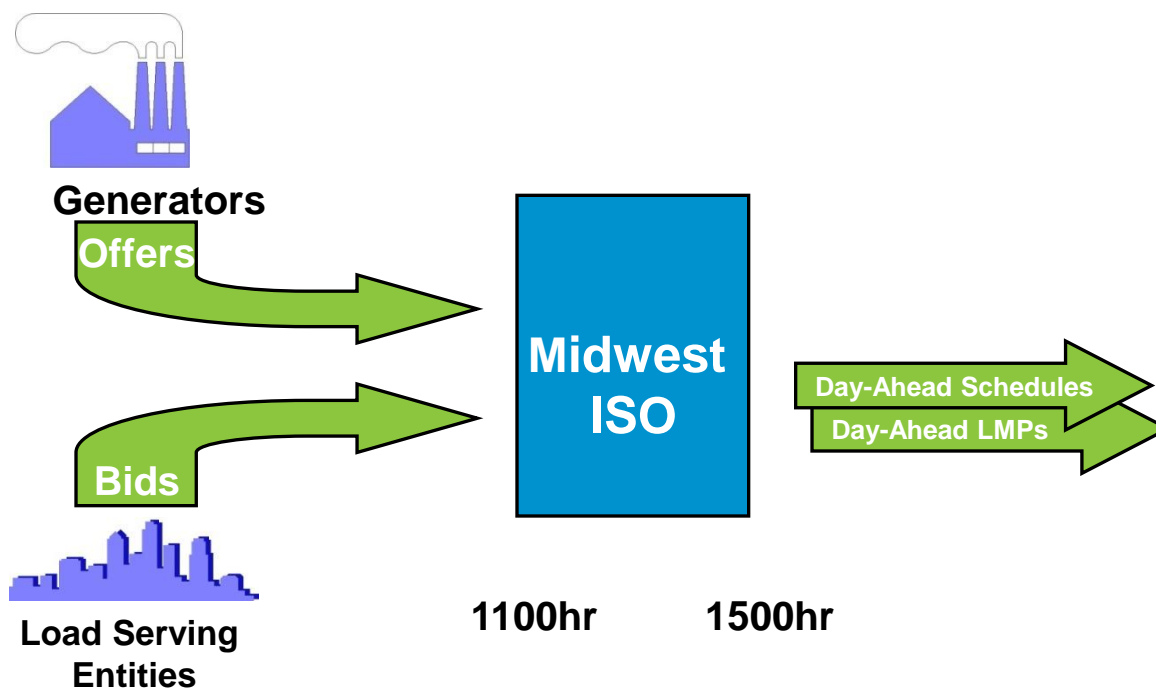
⁴Midwest ISO's reliability footprint prior to 12/31/2009 was used for these calculations

Markets are Midwest ISO's primary tools to efficiently manage generation and transmission assets, keeping energy prices as low as possible

Market	Summary	Implications
Day-Ahead Energy Market	<ul style="list-style-type: none">▶ Forward energy and ancillary services<ul style="list-style-type: none">– Price differentiated by physical location	<ul style="list-style-type: none">▶ Facilitate an efficient commitment of generation
Real-Time Energy Market	<ul style="list-style-type: none">▶ Spot energy and ancillary services<ul style="list-style-type: none">– Price differentiated by physical location– 5-minute energy dispatch	<ul style="list-style-type: none">▶ Dispatch the lowest-cost resources to satisfy system demand without overloading the transmission network
Financial Transmission Rights Market (FTR)	<ul style="list-style-type: none">▶ Allows participants to hedge transmission congestion risk associated with serving load or engaging in other market transactions▶ Preserves the value of existing investments through FTR allocation	<ul style="list-style-type: none">▶ Provide transparent economic signals to guide short-run operational and long-run investment decisions by participants and regulators
Resource Adequacy	<ul style="list-style-type: none">▶ Year and month ahead forward “planning reserve” or “capacity” product▶ Assures ability to produce energy and ancillary products	

Day-Ahead Energy Market – the vast majority of transactions occur in this market

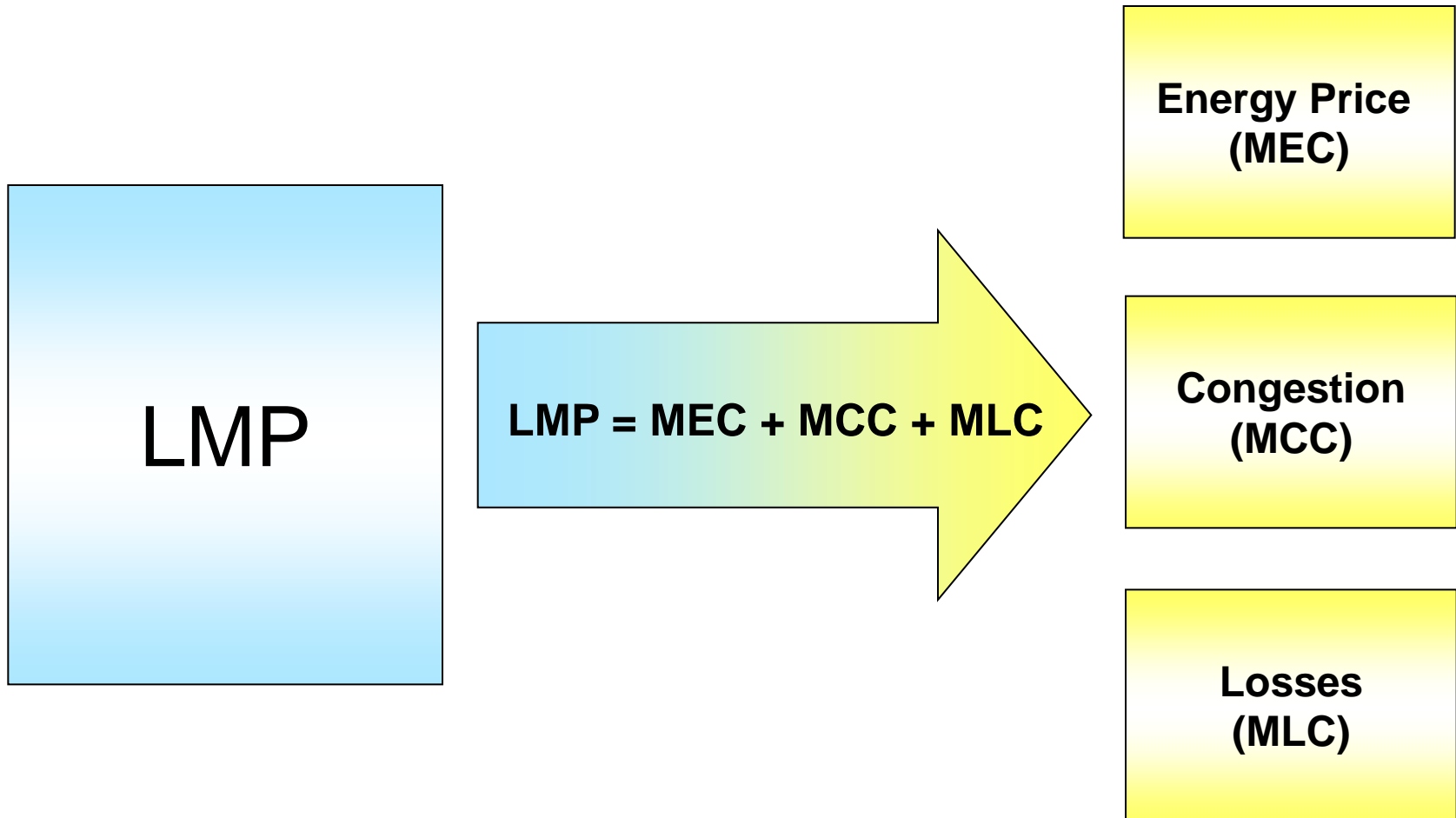
- ▶ Day-Ahead Energy Market is the “planning phase” – plan your next day operations and calculate costs
 - Pre-pay for energy, transmission, and ancillary services
 - Costs are based on congestion arising from expected system conditions
- ▶ Reflects participants’ expectations of next day market outcomes
- ▶ Market clearing process results in
 - An optimal set of unit commitment and hourly operating schedules for the next operating day based on bids and offers
 - A set of Day-Ahead Energy and Ancillary Service Market prices at which day-ahead cleared supply and demand schedules are settled



Real-Time Energy Market – serves as a “true-up” market to address actual real-time system conditions versus the day-ahead expected conditions

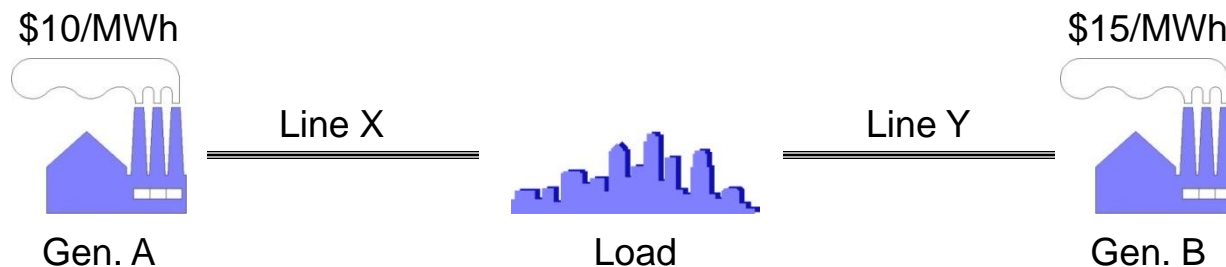
- ▶ Adjusts for deviations from your day-ahead plan
 - May experience unanticipated and unhedged congestion
- ▶ Reflects continuous balancing of supply and demand within limits of reliable transmission system operations
- ▶ Midwest ISO uses a Security Constrained Economic Dispatch (SCED) program to simultaneously:
 - Balance injections/withdrawals
 - Assure adequate operating reserves
 - Manage congestion
 - Produce prices used to establish resource basepoints

LMP Components



Financial Transmission Rights Market (FTR)

- ▶ Financial instrument that provides a “hedge” against congestion charges in the Day-Ahead Energy Market
 - Between a generation source and a load sink
 - Covers a specific period and capacity
 - Settles only in Day-Ahead Energy Market
- ▶ Reflects participant expectations of future Day-Ahead Energy Market outcomes
- ▶ FTRs are distributed annually and monthly via:
 - Allocation Process based on preexisting transmission “rights”
 - Auction Process



- ▶ If Line X is not congested, Load would buy from Gen. A for \$10/MWh
- ▶ If Line X is congested, Load would be forced to buy from Gen. B for \$15/MWh
- ▶ The congestion cost is \$5/MWh
- ▶ An FTR would allow Load to recover that congestion cost

The Midwest ISO's market and scale allow for more efficient use of generation resources to serve energy demand

Pre-Market

- ▶ Contract path transmission process that reduced efficiency
- ▶ High transaction costs
- ▶ Low market transparency
- ▶ Pancaked transmission rates
- ▶ Utility level dispatch with lower market efficiency



Post Market Implementation

- ▶ Optimized transmission utilization (market flow)
- ▶ Low transaction costs
- ▶ High market transparency
- ▶ No pancaked transmission rates
- ▶ Centralized unit commitment and dispatch

Annual Value of Efficient Dispatch Benefits - Entergy benefits are incremental to Midwest ISO stand alone

Midwest ISO Stand Alone

\$233 million

Entergy
Preliminary

\$134 million

Improved economic dispatch is the primary benefits area quantified in the Charles River study, even though it represents only a portion of the overall value proposition

Ancillary Services Market – Commitment and dispatch of regulation and reserves co-optimized with energy to maximize efficient use of resources

- ▶ **Regulation** - allows the system operator to physically balance supply and demand on a real-time, moment-to-moment basis
- ▶ **Contingency Reserves** - used to provide energy to meet demand on the system in the event of a sudden and unexpected loss of a generation or transmission resource
 - **Spinning Reserves** - Capability of generation resources or other qualified resources already synchronized to the grid to reach their targeted output within 10 minutes
 - **Supplemental Reserves** - Provided by generation resources, or other qualified resources, already synchronized or not currently synchronized to the grid, but which can be ramped up to supply energy within 10 minutes
- ▶ Energy, regulation and contingency reserves are co-optimized in the market – producing the most efficient result for the total market needs

The Midwest ISO's scale and Regulation Market reduces the regulation requirement and optimizes where regulation is held in the generation stack

Pre-ASM

- ▶ 26 Balancing Authorities ("BA's") each managing their own control areas resulted in BAs working "against" each other – some regulating up with others regulating down
- ▶ Capacity was held in low cost generation units to provide regulation; diverting resources that could have been used to serve the energy needs of the region
- ▶ Regulation Requirement = 1,200 MW



Post-ASM

- ▶ Centralized coordination significantly reduced the amount of regulation needed to manage frequency.
- ▶ This reduced requirement made low-cost generation available to serve energy needs.
- ▶ By co-optimizing regulation with energy, regulation was moved "up" in the dispatch stack, freeing low cost units to serve energy needs reducing costs.
- ▶ Regulation Requirement = 400 MW

Annual Value of Regulation Benefits

- Entergy benefits are incremental to Midwest ISO stand alone

Midwest ISO Stand Alone

\$128 million

Entergy
Preliminary

\$103 million

The Midwest ISO's scale and market reduces each members contingency/spinning reserve requirements and optimizes where they are held in the generation stack

Pre-ASM

- ▶ Smaller reserve sharing pools
- ▶ Reserves often held in low cost generation resulting in lost opportunity for greater efficient dispatch
- ▶ Spin Requirement = 1,400 MW



Post-ASM

- ▶ Establishing a bigger pool allows for a smaller “per capita” contingency reserve requirement.
- ▶ The reduced requirement would be met in a co-optimized manner with both energy and regulation.
- ▶ The result is lower costs in providing the same or better levels of reliability.
- ▶ Spin Requirement = 900 MW

Annual Value of Contingency Reserves

- Entergy benefits are incremental to Midwest ISO Stand Alone

Midwest ISO Stand Alone

\$72 million

Entergy (all)
Preliminary

\$52 million

Resource Adequacy basics:

- ▶ Planning Reserve Margin (RM) obligations based on Loss of Load Expectation Study
- ▶ Load Serving Entities (LSEs) are required to submit annual and monthly resource plans demonstrating compliance with RM
- ▶ Resource procurement to meet RM may be through:
 - Generation ownership
 - Demand response
 - Purchases via:
 - Bilateral contract
 - Midwest ISO administered bulletin board
 - Midwest ISO administered monthly voluntary auction
- ▶ Monthly compliance certification and financial settlement charge for LSEs with insufficient capacity
 - Calculated annually by Midwest ISO in concert with the Independent Market Monitor – currently \$80,000/MW per month
 - Compliance is based on before-the-fact forecasts

Footprint Diversity – The Midwest ISO’s geographic scope allows members to benefit from the diversity of peaks across the footprint

Pre-Midwest ISO

- ▶ Current economic conditions have reduced the need for new capacity additions
- ▶ Prior to the ASM market, member utilities were unable to benefit from the broader market diversity experienced across the entire Midwest ISO footprint
- ▶ Planning Reserve Margin Requirement
 - Footprint = 15.4%
 - Utility = 15.4%



Post-Midwest ISO

- ▶ With the potential for increased demand or accelerated retirements due to EPA regulations, footprint diversity becomes more critical
- ▶ Given the diversity in the Midwest ISO footprint, significant value can be achieved from deferring capacity additions
- ▶ Planning Reserve Margin Requirement
 - Footprint = 15.4%
 - Utility = 11.9%

Annual Value of Footprint Diversity Benefits Entergy benefits are incremental to Midwest ISO stand alone

Midwest ISO Stand Alone

\$315 million

Entergy
Preliminary
\$93 million

Generator Availability Factor – Market incentives have driven an increase in baseload unit availabilities

Pre-ASM

- ▶ Prior to the wholesale power market, generator availability for baseload plants was lower due to lack of incentives
- ▶ Over time this lower availability factor leads to greater required generation building
- ▶ Baseload Availability = 83.3%



Post-ASM

- ▶ Since developing the wholesale market, power plant availability has increased by approximately 3.2%
- ▶ Market mechanisms have provided incentives to increase plant availability
- ▶ This increase in availability delays the need for new construction
- ▶ Baseload Availability = 86.6%

Annual Value of Generator Availability Benefits - Entergy benefits are incremental to Midwest ISO stand alone

Midwest ISO Stand Alone

\$291 million

Entergy
Preliminary

\$60 million

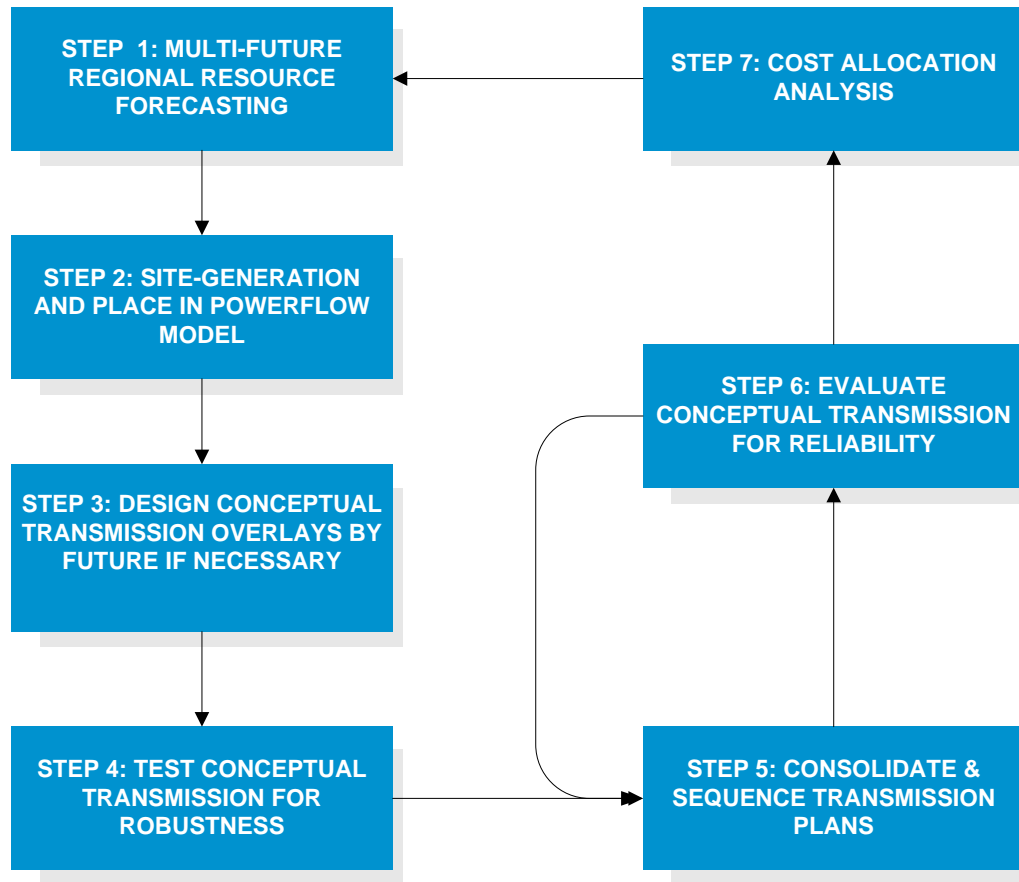
The Midwest ISO has established market mechanisms that provide opportunities and incentives for full demand participation, but does NOT offer any program to retail customers

- ▶ Existing and planned Midwest ISO market structures see to provide opportunities for demand to participate on a comparable basis to supply-side resources.
 - Ability to make consumption decisions based on the value of energy consumed relative to the prevailing market price.
 - Ability to offer and fully monetize the value of flexibility that can be offered to dynamically balance market supply and demand
- ▶ Some states in the Midwest ISO footprint have demand programs

Appendix B

Transmission Expansion - Additional Materials

Midwest ISO Value Based Planning

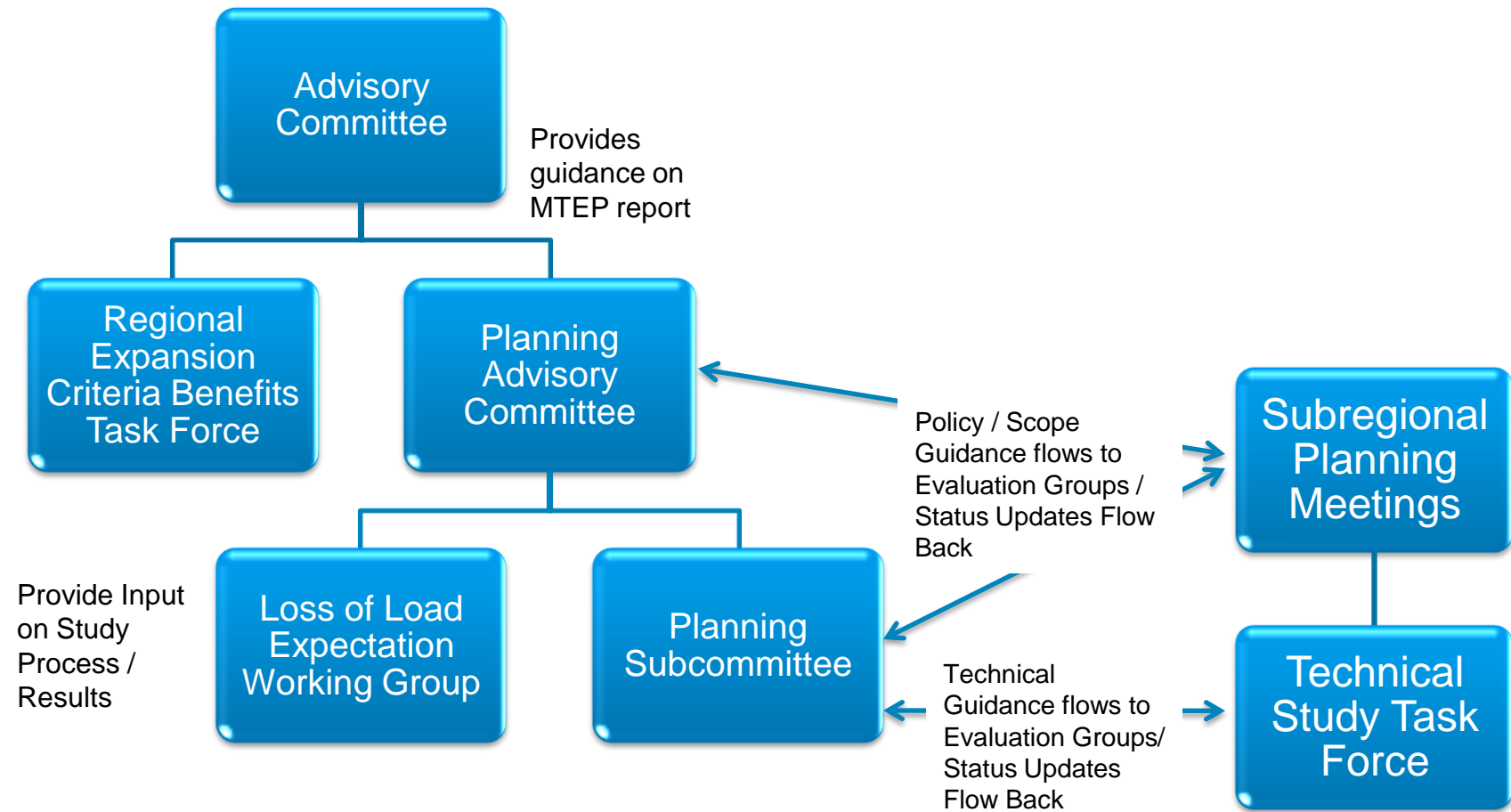


- Objective of value based planning is to develop a wide range of future scenarios
 - The “best” transmission plan may be different in each policy-based future scenario
 - The transmission plan that is the best-fit (most robust) against all these scenarios should offer the most future value in supporting the future resource mix

FERC Transmission Planning and Cost Allocation Proposed Rulemaking

- FERC is developing a new transmission planning and cost allocation rule to build on the principles identified in Order 890
 - Coordination; Openness; Transparency; Information Exchange; Comparability; Dispute Resolution; Regional Participation; Economic Planning Studies and Cost Allocation
- The proposed new rule seeks to address
 - Participation in a regional planning process
 - Planning for public policy, such as renewable mandates
 - Coordinated planning and improved cost sharing for interregional facilities
 - Elimination of so-called “right of first refusal” clauses
 - Increasing linkages between transmission planning and cost allocation methods

Stakeholder Interaction



Planning Process Results

- Between 2003 and 2009, 1,197 projects totaling \$7.9 billion were approved through Appendix A. Of these projects,
 - 43.4% are in-service
 - 47.1% are planned
 - 3.1% are under construction
 - 6.4% have withdrawn
- MTEP10 included 230 projects totaling \$1.2 billion in investment through 2020
 - Includes one Multi Value Project (MI Thumb project at \$510 Million)
 - These projects, along with a \$2.8 billion subset of Appendix A/B projects, provided more than \$825 million in annual market congestion benefits beginning in 2015

MTEP 2011 Scope

- Reliability Analysis
- Loss of Load Expectation Study
- Long-term Resource Assessment
- Value Based Planning Assessment
- Congestion Analysis
- Congested Flowgate Studies
- Candidate MVP Portfolio Study
- Eastern Interconnection Planning Collaborative
- EPA Impacts Study

June 2011 Project Approvals

- Currently two projects are expected to be brought to the Board of Directors (BOD) for June 2011 for approval
 - MVP: Brookings Co. and possibly related projects
 - Baseline Reliability Project: ATC, Straits Power Flow Control
- Projects will be introduced to the BOD in April
- Content review will continue through May
- Approval will be requested in June

Appendix C

Physical Tie / Interconnections

SPP's current claim of insufficient transfer capability to integrate Entergy into the Midwest ISO is inconsistent with the terms of the JOA between Midwest ISO and SPP

- ▶ SPP and the Midwest ISO have different interpretations of the Joint Operating Agreement between the parties
 - Issue is related to the ability to use transfer capability between the two systems in the event Entergy were to join the Midwest ISO
- ▶ The Midwest ISO has a nearly identical JOA with PJM, which works in the same manner as claimed by the Midwest ISO with respect to Entergy
 - Primary interconnection capability exists via a connection with Ameren
 - The Midwest ISO is confident sufficient transfer capability exists under the existing JOA
- ▶ The Midwest ISO has requested the parties resolve this dispute through the dispute resolution procedures of the JOA
 - Quickest path to resolution is via a filing with FERC
 - SPP has thus far refused to initiate dispute resolution with FERC

Managing congestion is done differently in market regions than it is in non-market regions.

- ▶ Transmission Load Relief (TLR) Process – Used in non-market regions
 - Established by NERC
 - Rights based process based on reservations
 - Congested flows are reduced by priority of rights and then by pro-rata share in the event of equal rights
- ▶ Security Constrained Economic Dispatch (SCED) – Used in market regions
 - Redispatches generation based on economics to reduce or maintain flows at limits
- ▶ Non-market regions can call TLRs on flows from a market and markets will redispatch (using SCED) in response
- ▶ Market regions can call TLRs on non-market flows and users will reduce flows in response

The difference in transmission congestion management techniques can be summarized as a management by contractual limits or by physical limits. The physical limit construct provides for more comprehensive utilization of the system.

Contract Path

- ▶ Transmission access/usage is determined by contractual rights
- ▶ Rights are acquired to meet peak flow expectations
- ▶ Contract path ignores parallel line flows (and the laws of physics)
- ▶ Congestion is managed by contractual rights and then by pro rata reduction of flows via the Transmission Loading Relief or TLR process



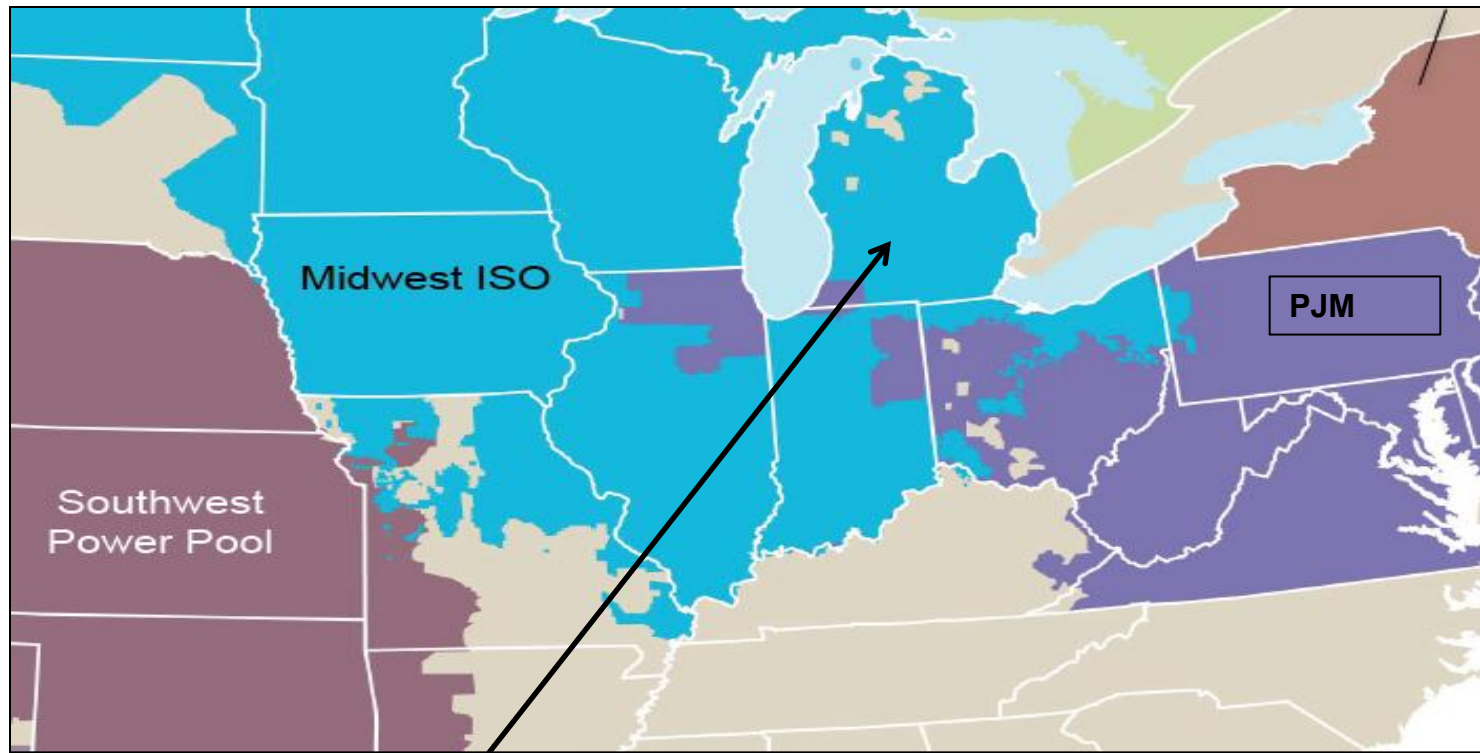
Market Managed Flow

- ▶ Transmission usage is determined by economics – what is the most efficient manner to serve load
- ▶ The laws of physics are respected by honoring line flow limits in a security-constrained dispatch
- ▶ Congestion is managed through economics by conducting a security-constrained unit dispatch every five minutes
- ▶ Prior contracted ownership rights are recognized through the allocation of Financial Transmission Rights (FTRs)

Advantages of Market Managed Flow

- ▶ Transmission system is more fully and economically utilized:
 - Transmission does not sit idle because someone is not using their contractual rights.
 - Congestion is relieved more quickly.
- ▶ Recognizing and accounting for both the physical realities (laws of physics) and contractual/historical rights (granting FTRs)
- ▶ Result is increasing the amount of economic generation available to load – reducing costs

There are well established cases of using market based techniques to manage congestion across systems and the Midwest ISO is well experienced.



- ▶ There is only a 215 MVA contractual transmission path in the Midwest ISO between Northern Indiana (NIPSCO) and Michigan (ITC).
- ▶ However, many thousands of MW of physical transfer capability exist – the vast majority on the transmission systems of PJM members.
- ▶ The Joint Operating Agreement (JOA) with PJM allows the Midwest ISO to utilize PJM's transfer capability to Michigan.
- ▶ The success of this process is shown by the similarity of pricing between the Cinergy hub and the Michigan/FE hub – indicating minimal congestion issues between the locations.

The Midwest ISO expects to apply these same methods if Entergy elects to join the Midwest ISO.

- ▶ Entergy and the Midwest ISO are primarily physically interconnected at New Madrid, Missouri via Ameren's 500/345 KV transformer
 - Direct contiguous tie of approximately 1,000 MW
- ▶ The Joint Operating Agreement ("JOA") approved by FERC on Dec 1, 2004 provides for the sharing of contract path capacity between the Midwest ISO and SPP in Section 5.2
 - Section modeled after very similar provision in Midwest ISO and PJM JOA, which was the first of its kind approved by FERC
 - During negotiations of the JOA between the Midwest ISO and SPP, FERC mandated the relevant provision in Section 5.2 in order for SPP to qualify as a RTO
- ▶ Outside legal counsel for the Midwest ISO has confirmed that the agreement covers this very type of situation
- ▶ Using a "market flow" methodology, our study indicates adequate transmission capacity to allow Entergy to join and fully participate in the Midwest ISO

Appendix D

Qualified Facilities

Qualified Facilities - Entry into a market will immediately improve any current daily operational issues. However, the contractual and retail rate issues require more effort.

- ▶ Real-time Operations – Scale and market-based dispatch mitigate the effects of Qualified Facilities in the same manner as for intermittent wind resources and changes in net scheduled interchange
- ▶ New QFs - The Energy Policy Act of 2005 and FERC rules adopted in 2006 allow utilities operating in organized markets to terminate the purchase obligation for new QFs
- ▶ Existing QFs
 - ▶ Existing arrangements / agreements and their financial implications are not modified by entry into a market. Those terms are governed by state regulators.
 - ▶ However, we have successfully worked with some of our members to more appropriately align the arrangements / agreements with the financial realities of market-based dispatch.

Appendix E

Compliance / Audits

The Midwest ISO has worked to clearly define its compliance requirements and fulfillment processes and continues to be subject to numerous audits

- ▶ Annual Financial Audit
- ▶ Annual SAS 70 / SSAE-16 Control Audits
- ▶ FERC Audits ~ 3 year cycle
- ▶ NERC Audits (2009 / 2012)
 - Midwest Reliability Organization
 - Reliability First Organization
 - SERC Reliability Corporation
- ▶ Audit rights – Members / Regulatory Authorities